

REMARKS

The term in the Abstract objected to has been amended as required. The title of this invention has also been amended. Some of the rejected claims have been amended to remove the rejections. No new matter has been added.

Applicant notes that the Office Action Summary indicates in the Disposition of the Claims that claims 26 and 27 stand rejected. However, the detailed Office Action does not provide the reasons for or the legal authority under which claims 26 and 27 stand rejected. *See*, Office Action, p. 2, ¶¶ 4-5, p. 3, ¶6. Applicant does hereby provide a response to the Office Action to the fullest extent possible, and requests that claims 26 and 27 be referred to in the next communication from the United States Patent and Trademark Office indicating their status and grounds for their status, and acknowledging that the present Response has been considered by the Examiner as applicable to claims 26 and 27 to the extent that any grounds for rejection under 35 U.S.C. § 102(b), 103(a) in view of *Lim et al.* (U.S. Patent No. 5,530,673) was meant to apply to claims 26 and/or 27.

Applicant submits this Amendment "A" and Response for the Examiner's consideration. Reexamination and reconsideration of the application, as amended, in view of the following remarks are respectfully requested.

1. STATUS OF THE CLAIMS

Claims 1-61 were presented for examination; claims 1-61 stand rejected and pending in the application. Claims 1-9, 17-24, 28-30, 33-35, 37-38, 40-42, 44-47, 49-52, 54-57 and 59-61 stand rejected under 35 U.S.C. § 102(b). Some claims are amended to overcome some of these rejections whereas some of these rejections are traversed below. Claims 10-16, 25, 31-32, 36, 39, 43, 48, 53 and 58 stand rejected under 35 U.S.C. § 103(a). These rejections are traversed as set forth below.

2. RESPONSE TO REJECTIONS

2.1. Claim Rejections Under 35 U.S.C. § 102(b)

The following claims:

Independent claim 1, and dependent claims 2-8;

Independent claim 9, and dependent claims 17 and 18;

Independent claim 19, and dependent claims 20-24, 28-30, and 33-34;

Independent claim 35, and dependent claims 37-38 and 40-41;

Independent claim 42, and dependent claims 44-46;

Independent claim 47, and dependent claims 49-51;

Independent claim 52, and dependent claims 54-56; and

Independent claim 57, and dependent claims 59-61;

stand rejected under 35 U.S.C. § 102(b) as being anticipated by Lim *et al.*, (U.S. Patent No. 5,530,376) (hereinafter "Lim").

Lim discloses a reusable carrier for burn-in/testing of non-packaged die. The carrier disclosed by Lim has a well that is configured for receiving and holding therein a die for burn-in/testing. *See, e.g.*, Lim, Figs. 1, 1B, 2, 4, 5A, 6A, 7C, 8D, 9, 10-13, 13A, 14-16; col. 5, *ll.* 24-25, 51, 55, 65-66; col. 6, *ll.* 29-30, 39-43, 56; col. 7, *l.* 66; col. 8, *ll.* 1, 21, 58-59; col. 9, *ll.* 5-6.

In marked contrast with the disclosure provided by Lim, independent claims 35, 42, 47, 52 and 57 recite a "substantially planar sheet." This recitation is also incorporated into dependent claims 37-38, 40-41, 44-46, 49-51, 54-56 and 59-61 because these claims depend directly or through intervening claims from claims 35, 42, 47, 52 and 57.

Because of at least the foregoing recited feature in claims 35, 37-38, 40-41, 42, 44-46, 47, 49-51, 52, 54-56, 57 and 59-61, Lim does not teach or disclose each and every feature of the invention recited in these claims.

As stated by the Federal Circuit,

Anticipation requires the presence in a single prior art reference disclosure of each and every element of the claimed invention, arranged as in the claim.

Lindermann Maschinenfabrik GmbH v. American Hoist & Derrick Co., 730 F.2d 1452, 1458, 221 U.S.P.Q. 481, 485 (Fed. Cir. 1984).

Independent claims 1, 9, and 19 have been amended to recite "the substrate being configured for receiving thereon a semiconductive device". This recitation is also incorporated into dependent claims 2-8, 17-18, 20-24, 28-30 and 33-34 because these claims depend directly or through intervening claims from claims 1, 9, and 19. Lim does not teach or disclose a carrier configured for receiving thereon a die, but, as indicated hereinabove, Lim discloses a carrier that has a well for receiving and holding therein a die for burn-in/testing.

Because at least the foregoing recited feature in claims 1-8, 9, 17-18, 19-24, 28-30, and 33-34, Lim does not teach or disclose each and every feature of the invention recited in these claims. Applicant incorporates herein the quote and citation set forth regarding the removal of Lim as a reference concerning an anticipation rejection of independent claims 35, 42, 52 and 57 and claims dependent thereof. Consequently, Lim does not anticipate the invention recited in claims 1-8, 9, 17-18, 28-30 and 33-34. Applicant respectfully submits that these claims as amended patentably distinguishes over Lim, and reconsideration and withdrawal of this rejection is respectfully requested.

Consequently, Lim does not anticipate the invention recited in these claims. Applicant respectfully submits that claims 35, 37-38, 40-41, 42, 44-46, 47, 49-51, 52, 54-56, 57 and 59-61 patentably distinguish over Lim, and reconsideration and withdrawal of this rejection is respectfully requested.

2.2 Claim Rejections Under 35 U.S.C. § 103(a)

The following claims:

Dependent claims 10-16, 25, 31-32, 36, 39, 43, 48, 53 and 58 ;
stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Lim.

For reasons such as those set forth hereinbelow, Lim does not provide the teachings which would render the recited invention obvious.

The carrier disclosed by Lim is provided with a heat sink for dissipating heat from a die inserted within a well in the carrier and for holding, by itself or with the cooperation of additional elements, the die. Furthermore, the die in the device disclosed by Lim is completely covered or almost fully covered by the heat sink structure. *See, e.g.*, Lim, Figs. 1, 2, 5A, 6A, 9, 10-16; col. 5, ll. 27-31, 33-35; col. 6, ll. 7-9, 15-18, 22-34.

The Office Action does not indicate how the disclosure in Lim teaches or suggests the use of the carrier disclosed therein to produce the invention recited in the rejected claims. Claims 10-16, 25 and 31-32 recite a system comprising a substrate which is "configured for receiving thereon a semiconductive device". Claims 36, 39, 43, 48, 53 and 58 recite a system comprising a "substantially planar sheet" and "an electrical conductor on the sheet" with the electrical conductor being configured "for connecting to a semiconductor device".

Considering the working conditions, and in particular the heat generation, of the claimed system, Lim fails to teach or suggest how one could use a device that receives a die within a well and contains it therein with a heat sink and other cooperative elements to devise a system having an interposer with the features as recited in the rejected claims. This limitation in the disclosure by Lim is particularly important in light of the volume-sensitivity exhibited by problems related with heat generation and heat dissipation. The configuration of the semiconductive device with respect to the interposer as recited in the rejected claims is completely different from the configuration of the die with respect to the carrier as disclosed by Lim. This reference does not teach or even suggest how the claimed invention could have been carried out or its design would have had a reasonable likelihood of success in light of the disclosure provided by Lim. Furthermore, the configuration disclosed by Lim and the required use of the holding elements disclosed therein would have discouraged one of ordinary skill in the art from following the path set out in Lim.

To this respect, the Federal Circuit has explained that “[t]he consistent criterion for determination of obviousness is whether the prior art would have suggested to one of ordinary skill in the art that this ... [invention] should be carried out and would have a reasonable likelihood of success.” (Citations omitted). *Rockwell Int'l Corp. v. United States*, 147 F.3d 1358, 47 U.S.P.Q.2d 1027, 1033 (Fed. Cir. 1998).

Furthermore, in light of these differences and limitations in Lim, “a person of ordinary skill, upon reading the reference, would be discouraged from following the path set out in the reference, or would be led in a direction divergent from the path that was taken by the Applicant”. *United States v. Adams*, 383 U.S. 39, 52 (1996). See also *W.L. Gore & Assocs. v. Garlock, Inc.*, 721 F.2d 1540, 1550-51 (Fed. Cir. 1983), *cert. denied*, 469 U.S. 851 (1984). In addition, “[b]oth the

suggestion and the expectation of success must be founded in the prior art, not in applicant's disclosure." *In re Dow Chemical Co.*, 837 F.2d 469, 473 (Fed. Cir. 1988).

Because of differences and limitations such as those described hereinabove, Lim does not teach or suggest the recited subject matter, and it may not be asserted that the teachings provided by Lim are sufficient for one of ordinary skill in the art to make the substitutions, combinations or other modifications that are necessary to arrive to the claimed invention as recited in claims 10-16, 25, 31-32, 36, 39, 43, 48, 53 and 58.

Consequently, Applicant respectfully submits that Lim does not support a *prima facie* case of obviousness regarding the rejected claims. Applicant respectfully requests the reconsideration and withdrawal of these rejections.

3. CONCLUSIONS

In view of the above, Applicant respectfully maintains that the present application is in condition for allowance. Reconsideration of the rejections is requested. Allowance of claims 1-61 at an early date is solicited.

In the event that the Examiner finds any remaining impediment to a prompt allowance of this application which could be clarified by a telephonic interview, or which is susceptible to being

overcome by means of an Examiner's Amendment, the Examiner is respectfully requested to initiate the same with the undersigned attorney.

Dated this 12 day of September 2000.

Respectfully submitted,



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